

DEPARTMENT of ENVIRONMENTAL SERVICES
Water Supply & Pollution Control Division - Biology Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake: STONE POND	Lake Area (ha):	26.26
Town: MARLBOROUGH	Maximum depth (m):	14.6
County: Cheshire	Mean depth (m):	6.0
River Basin: Connecticut	Volume (m ³):	1570500
Latitude: 42°53'52" N	Relative depth:	2.5
Longitude: 72°09'20" W	Shore configuration:	1.32
Elevation (ft): 1296	Areal water load (m/yr):	5.99
Shore length (m): 2400	Flushing rate (yr ⁻¹):	1.00
Watershed area (ha): 284.9	P retention coeff.:	0.63
% watershed ponded: 0.0	Lake type:	natural w/dam

<u>BIOLOGICAL:</u>		27 January 1994	7 July 1993
DOM. PHYTOPLANKTON (% TOTAL)	#1	TABELLARIA 45%	TABELLARIA 60%
	#2	ASTERIONELLA 40%	RHIZOLENIA 15%
	#3	DINOBRYON 15%	PENNATE DIATOM SPP 10%
PHYTOPLANKTON ABUNDANCE (cells/mL)			780
CHLOROPHYLL-A (µg/L)			1.85
DOM. ZOOPLANKTON (% TOTAL)	#1	BOSMINA 26%	KERATELLA 62%
	#2	CALANOID COPEPOD 23%	
	#3	KERATELLA 20%	
ROTIFERS/LITER		20	24
MICROCRUSTACEA/LITER		44	15
ZOOPLANKTON ABUNDANCE (#/L)		65	39
VASCULAR PLANT ABUNDANCE			Scattered
SECCHI DISK TRANSPARENCY (m)			6.2
BOTTOM DISSOLVED OXYGEN (mg/L)		17.4	0.6
BACTERIA (E. coli, #/100 ml)	#1		
	#2		
	#3		

SUMMER THERMAL STRATIFICATION:

stratified

Depth of thermocline (m):	7.2
Hypolimnion volume (m ³):	72500
Anoxic volume (m ³):	9000

CHEMICAL:Lake: STONE POND
Town: MARLBOROUGH

	27 January 1994		7 July 1993		
DEPTH (m)	4.0	9.0	2.5	7.0	11.5
pH (units)	6.2	5.9	6.6	6.5	6.3
A.N.C. (Alkalinity)	2.1	2.0	1.7	1.9	2.5
NITRATE NITROGEN	< 0.05	0.07	< 0.02		< 0.02
TOTAL KJELDAHL NITROGEN	0.24	0.16	< 0.10	0.15	0.13
TOTAL PHOSPHORUS	0.006	0.006	0.003	0.006	0.010
CONDUCTIVITY (μ mhos/cm)	26.5	27.1	24.8	24.1	25.0
APPARENT COLOR (cpu)	< 5	< 5	< 5	7	11
MAGNESIUM			0.58		
CALCIUM			1.0		
SODIUM			1.7		
POTASSIUM			0.60		
CHLORIDE	2	2	< 3		< 3
SULFATE	5	5	5		4
TN : TP	40	38			13
CALCITE SATURATION INDEX			4.5		

All results in mg/L unless indicated otherwise

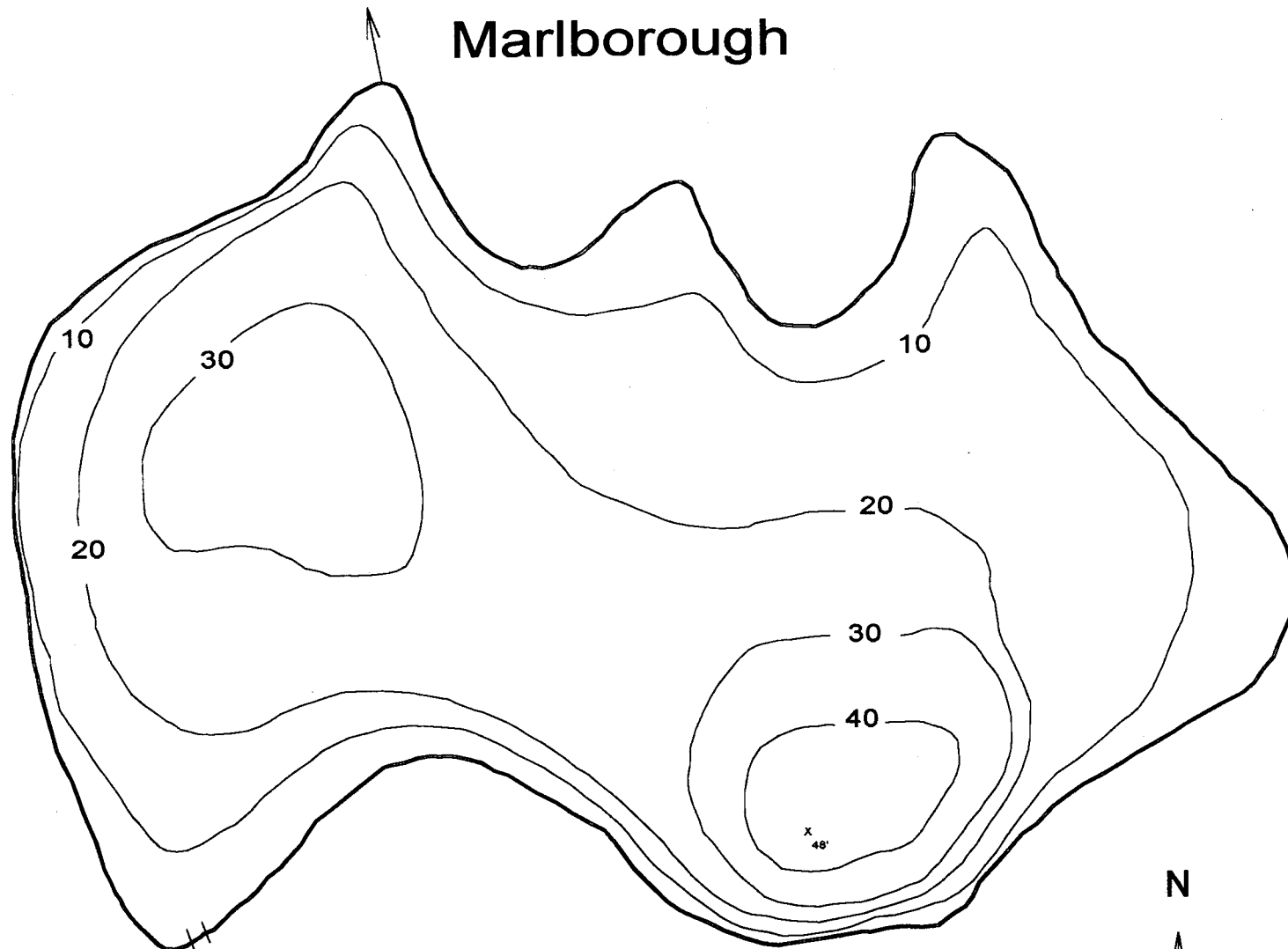
TROPHIC CLASSIFICATION: 1993

D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
3	1	1	0	5	Oligo.

COMMENTS:

1. This pond was previously surveyed and classified in 1979. There was no change in trophic classification and little change in water quality. The major change in water quality was the presence of a dissolved oxygen depletion zone in the bottom waters in 1993. The lack of finding such a zone in 1979 was probably because a much shallower depth was sampled in 1979.
2. This pond has been sampled twice a year, during spring and fall overturn, since 1983 as part of DES' acid rain monitoring program. The pH has ranged around 6.0 to 6.2 during this time, with ANC's between 1.0 and 2.0. Higher pH values during the summer suggest photosynthetically enhanced values.
3. A good boat launch site was present adjacent to the Town Beach at the site of the old outlet at the southwest end of the pond. The pond now drains through the northwest end.
4. Rhizosolenia (35%) and Elakatothrix (20%) were the dominant genera of wholewater phytoplankton.

Stone Pond Marlborough



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launch

10 foot depth contours

0 0.2

Km

N

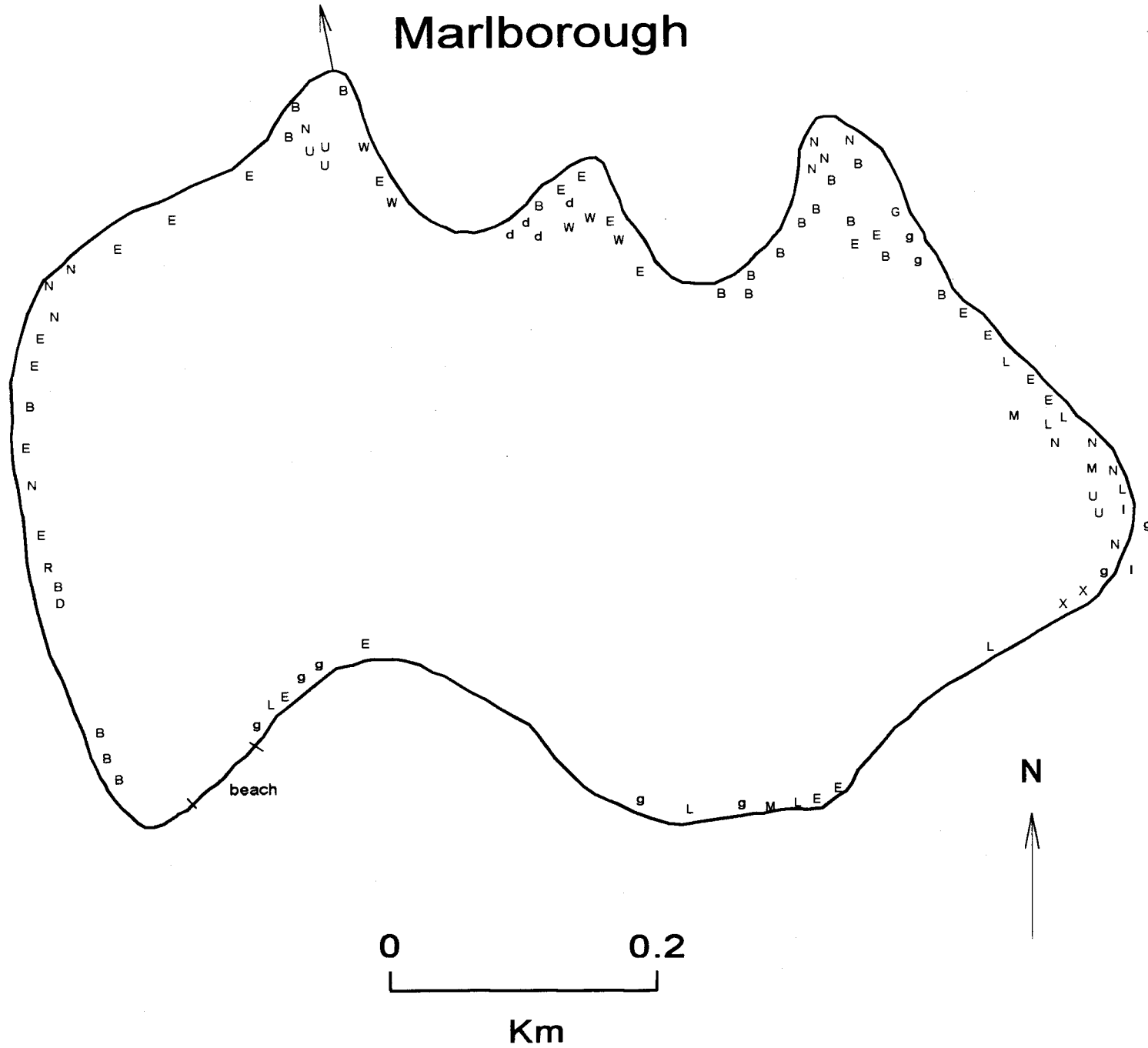
TOWN: MARLBOROUGH
WEATHER: 90'S & HUMID

SECCHI DISK (m): 6.2
BOTTOM DEPTH (m): 14.0
TIME: 1345

***Dissolved oxygen values are in mg/L**

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